

Applicant: Kaisa Putkisto et al.
Application No.: 10/507,417
Response to Office action dated Feb. 14, 2006
Response dated March 10, 2006

Claim Listing

1-4. (cancelled)

5. (currently amended) A method for coating a paper or board web in a dry surface treatment process comprising the steps of:

pre-charging particles of a dry powder by causing the dry powder to move between a first electrode producing a corona charge and ~~[[an]]~~ a second electrode at a lower or opposite potential to form pre-charged particles;

supplying the pre-charged particles to a feeding nozzle forming ~~[[an]]~~ a third electrode and blowing the pre-charged particles from the feeding nozzle toward the paper or board web, the feeding nozzle being positioned between a second fourth electrode producing a corona discharge upstream of the feeding nozzle and a ~~third~~ fifth electrode producing a corona discharge downstream of the feeding nozzle, wherein the feeding nozzle is spaced from the paper or board web a first distance, and wherein the second electrode and the third electrode are spaced from the paper or board web a distance which is less than the first distance;

wherein the paper or board web is backed by a grounding electrode at a potential which is lower than or opposite to the potentials of the feeding nozzle forming the third electrode, the ~~second~~ fourth electrode, and the ~~third~~ fifth electrode, and wherein the feeding nozzle forming the third electrode, the ~~second~~ fourth electrode, and the ~~third~~ fifth electrode are located on a side of the paper or board web opposite the grounding electrode.

6. (previously presented) The method of claim 5 wherein the grounding electrode is a rotatable roll.

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7. (previously presented) The method of claim 5 wherein the grounding electrode is a stationary platy electrode.

8. (currently amended) A method for coating a paper or board web in a dry surface treatment process comprising the steps of:
pre-charging particles of a dry powder by causing the dry powder to move along the walls of a transfer pipe to charge the particles by triboelectric charging;
supplying the pre-charged particles to a feeding nozzle forming a first ~~[[an]]~~ electrode and blowing the pre-charged particles from the feeding nozzle toward the paper or board web, the feeding nozzle being positioned between a ~~[[first]]~~ second electrode producing a corona discharge upstream of the feeding nozzle and a ~~second~~ third electrode producing a corona discharge downstream of the feeding nozzle, wherein the feeding nozzle is spaced from the paper or board web a first distance, and wherein the first ~~second~~ electrode and the ~~second~~ third electrode are spaced from the paper or board web a distance which is less than the first distance;
wherein the paper or board web is backed by a grounding electrode at a potential which is lower than or opposite to the potentials of the feeding nozzle forming the first electrode, the ~~[[first]]~~ second electrode, and the ~~second~~ third electrode, and wherein the feeding nozzle, the ~~[[first]]~~ second electrode, and the ~~second~~ third electrode are located on a side of the paper or board web opposite the grounding electrode.

9. (previously presented) The method of claim 8 wherein the grounding electrode is a rotatable roll.

10. (previously presented) The method of claim 8 wherein the grounding electrode is a stationary platy electrode.

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11. (currently amended) A method for coating a dry surface treatment process comprising the steps of:

pre-charging particles of a dry powder by causing the dry powder to move between a first electrode producing a corona charge and ~~[[an]]~~ a second electrode at a lower or opposite potential to form pre-charged particles;

supplying the pre-charged particles to a feeding nozzle forming ~~[[an]]~~ a third electrode and blowing the pre-charged particles from the feeding nozzle toward ~~[[the]]~~ a web, the feeding nozzle being positioned between a ~~second~~ fourth electrode producing a corona discharge upstream of the feeding nozzle and a ~~third~~ fifth electrode producing a corona discharge downstream of the feeding nozzle, wherein the feeding nozzle is spaced from the web a first distance, and wherein the second electrode and the third electrode are spaced from the web a distance which is less than the first distance;

wherein the web is backed by a grounding electrode at a potential which is lower than or opposite to the potentials of the feeding nozzle forming the third electrode, the ~~second~~ fourth electrode, and the ~~third~~ fifth electrode, and wherein the feeding nozzle forming the third electrode, the ~~second~~ fourth electrode, and the ~~third~~ fifth electrode are located on a side of the web opposite the grounding electrode.

12. (previously presented) The method of claim 11 wherein the grounding electrode is a rotatable roll.

13. (previously presented) The method of claim 11 wherein the grounding electrode is a stationary platy electrode.

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14. (currently amended) A method for coating a web in a dry surface treatment process comprising the steps of:
- pre-charging particles of a dry powder by causing the dry powder to move along the walls of a transfer pipe to charge the particles by triboelectric charging;
 - supplying the pre-charged particles to a feeding nozzle forming ~~[[an]]~~ a first electrode and blowing the pre-charged particles from the feeding nozzle toward the web, the feeding nozzle being positioned between a ~~[[first]]~~ second electrode producing a corona discharge upstream of the feeding nozzle and a third ~~second~~ electrode producing a corona discharge downstream of the feeding nozzle, wherein the feeding nozzle is spaced from the paper or board web a first distance, and wherein the ~~[[first]]~~ second electrode and the third ~~second~~ electrode are spaced from the paper or board web a distance which is less than the first distance;
 - wherein the paper or board web is backed by a grounding electrode at a potential which is lower than or opposite to the potentials of the feeding nozzle forming the first electrode, the ~~[[first]]~~ second electrode, and the third second electrode, and wherein the feeding nozzle forming the first electrode, the ~~[[first]]~~ second electrode, and the third second electrode are located on a side of the paper or board web opposite the grounding electrode.
15. (previously presented) The method of claim 14 wherein the grounding electrode is a rotatable roll.
16. (previously presented) The method of claim 14 wherein the grounding electrode is a stationary platy electrode.